

CLAIM AMENDMENTS

1 - 12. (canceled)

1 13. (new) A reactor for gasifying granular fuels, the
2 reactor comprising:

3 a casing;

4 means including a reservoir holding the granular fuel and
5 opening into the casing for forming in the casing a fixed bed of
6 the granular fuel having an upper surface;

7 means for introducing an oxygen-containing gasification
8 medium into the bed below the surface thereof such that the
9 gasification medium moves up through the fixed bed of granular fuel
10 and creates an endothermic reaction in the fixed bed with partial
11 oxidation of the bed and the creation of a product gas containing
12 hydrogen and carbon oxides rising from the surface of bed, whereby
13 the product gas entrains particles upward from the surface out of
14 the fixed bed;

15 at least one centrifugal separator in the casing and at
16 least partially imbedded in the bed for separating particles from
17 the product gas, the separator having an upper inlet opening above
18 the fixed bed of granular fuel for taking in the particle-laden
19 product gas coming from the fixed bed of granular fuel, an outlet
20 for product gas, and a lower solid discharge opening directly into
21 the fixed bed below the surface thereof; and

22 means including a discharge duct connected above the
23 surface to the outlet of the separator for withdrawing the product
24 gas from the casing.

1 14. (new) The reactor for gasifying granular fuels
2 defined in claim 13 wherein there are a plurality of the
3 centrifugal separators in the casing and the discharge duct is
4 formed as an annular chamber disposed in an upper portion of the
5 reactor above the bed surface.

1 15. (new) The reactor for gasifying granular fuels
2 defined in claim 13 wherein the casing is provided in an upper
3 portion of the reactor above the bed surface with a vertical
4 annular wall and the inlet of the separator is outside a portion of
5 the reactor enclosed by the annular wall.

1 16. (new) The reactor for gasifying granular fuels
2 defined in claim 15 wherein the centrifugal separator is disposed
3 outside the portion enclosed by the annular wall.

1 17. (new) The reactor for gasifying granular fuels
2 defined in claim 13 wherein the centrifugal separator is a cyclone.

1 18. (new) A method of gasifying granular fuels, the
2 method comprising the steps of:

3 forming in a casing a fixed bed of the granular fuel
4 having an upper surface;

5 positioning in the casing at least one centrifugal
6 separator at least partially imbedded in the fixed bed and having
7 an upper inlet opening in the casing directly above the fixed bed
8 of granular fuel, a lower particle-discharge opening directly into
9 the fixed bed below the surface thereof, and a gas outlet; and

10 introducing an oxygen-containing gasification medium into
11 the bed below the surface thereof such that the gasification medium
12 moves up through the fixed bed of granular fuel and creates an
13 endothermic reaction in the fixed bed with partial oxidation of the
14 bed and the creation of a product gas containing hydrogen and
15 carbon oxides rising from the surface of bed and gas entraining
16 particles upward from the surface out of the fixed bed; and

17 withdrawing gas from the separator gas outlet and thereby
18 drawing the particle-carrying product gas into the separator inlet
19 and centrifugally separating the particles from the product gas
20 with the particles dropping through the particle discharge directly
21 into the bed and the product gas being drawn out through the gas
22 outlet.

1 19. (new) The gasifying method defined in claim 18,
2 further comprising the step of:
3 subdividing a space in the casing above the upper surface
4 of the bed into a central chamber and an annular chamber
5 surrounding the central chamber;
6 the bed being formed by pouring the granular fuel into the casing
7 through the central chamber, there being a plurality of the
8 separators with their gas outlets all opening into the annular
9 chamber, the gas being withdrawn from the separator gas outlets via
10 the annular chamber.